

APPLICANT(S): NAPADENSKY, Eduardo et al.  
SERIAL NO.: 10/725,995  
FILED: December 3, 2003  
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### AMENDMENTS TO THE CLAIMS

Please add or amend the claims to read as follows, and cancel without prejudice or disclaimer to resubmission in a divisional or continuation application claims indicated as cancelled. The listing of the claims will replace all prior versions, and listing, of claims in the application.

#### Listing of the Claims

1. – 79. (Cancelled)

80. (Currently Amended) A method for the preparation of a multi-phase composite material ~~having properties and structure according to intended use of said multi-phase composite material, said composite material comprising a combination of at least two types of phases or regions, each comprising a different combination of interface materials, the method comprising:~~

~~generating data from a CAD system and a system controller for predetermined combinations of at least two compositions, each having different properties preparing the multi-phase composite material having properties and structure according to the intended use of said multi-phase composite material by combining two or more of said interface materials into at least two types of said phases or regions;~~

~~selectively dispensing said two or more interface materials, layer by layer, in liquid form from two or more corresponding dispensers according to the data generated said at least two compositions having different properties, each composition interface material being dispensed from a different dispenser, via ink jet nozzles to form at least two different types of phases combined according to the data generated;~~

~~selectively adjusting the output from said inkjet nozzles according to the data generated to control the properties of different combinations of said compositions so as to provide two or more different phases or regions of the~~

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multi-phase composite material that are structurally different, chemically different or have different properties; and

curing or solidifying the dispensed compositions said two or more materials after deposition at a controlled temperature to obtain said multi-phase composite material with desired having properties that vary along an axis of the multi-phase composite material and structure.

81. – 90. (Cancelled)

91. (Currently Amended) The method according to claim 80, wherein at least ~~two~~ one of said ~~interface materials comprise~~ compositions comprises a curable component.

92. (Original) The method according to claim 91, wherein said curable component is electron beam curable, electromagnetic radiation curable, thermo-curable or any combination thereof.

93. (Currently Amended) ~~The A method according to claim 80 for the preparation of a multi-phase composite material, the method comprising:~~

generating data from a CAD system and a system controller for predetermined combinations of at least two compositions, each having different properties;

dispensing according to the data generated said at least two compositions having different properties, each composition being dispensed from a different dispenser via ink jet nozzles;

selectively adjusting the output from said inkjet nozzles according to the data generated to control the properties of different combinations of said compositions so as to provide two or more different phases or regions of the multi-phase composite material that are structurally different, chemically different or have different properties; and

curing or solidifying the dispensed compositions to obtain said multi-phase composite material having wherein one or more of said desired properties

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which change ~~changes~~ along a gradient, said property gradually increasing along an axis of said composite material.

94. (Cancelled)

95. (Previously Presented) The method according to claim 80, wherein at least one of said phases is a continuous phase.

96. (Previously Presented) The method according to claim 80, wherein at least one of said phases is a non-continuous phase.

97. (Currently Amended) The method according to claim 80, wherein the desired properties of said multi-phase composite material are selected from the group consisting of isotropic properties, anisotropic properties ~~or~~ and a combination thereof.

98. (Currently Amended) The method according to claim 80, wherein said desired properties are mechanical, thermo-mechanical, optical, acoustic, electrical properties or any combination thereof.

99. (Previously Presented) The method according to claim 98, wherein said mechanical properties comprise mechanical strength, the mechanical strength along one axis of the multi-phase composite material is being different to the mechanical strength along another axis of said multi-phase composite material.

100. (Previously Presented) The method according to claim 98, wherein said mechanical properties comprise elasticity, the elasticity along one axis of the multi-phase composite material is being different to the elasticity along another axis of said multi-phase composite material.

101. -124. (Cancelled)

125. (Currently Amended) The method according to claim 80, wherein each said phase comprises a multiplicity of layers.

126 (Cancelled)